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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,208	12/16/2005	Christian Kuhrs	268557US0PCT	8828

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EXAMINER

NGUYEN, NGOC YEN M

ART UNIT PAPER NUMBER

1754

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/529,208

Applicant(s)

KUHS ET AL.

Examiner

Ngoc-Yen M. Nguyen

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over F. Hund (3,667,913).

Hund '913 discloses a method for catalytically oxidizing hydrogen chloride with oxygen to form chlorine and water. The process comprises catalyzing such oxidation by a chromium oxide catalyst and carrying out said oxidation at about 240 to 600°C (note claim 1). This range overlaps the claimed range of less than 300°C. With respect to the encompassing and overlapping ranges previously discussed, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time of invention to select the portion of the prior art's range which is within the range of the applicants' claims because it has been held prima facie case of obviousness to select a value in a known range by optimization for the results. *In re Boesch*, 205 USPQ 215. Additionally, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. *In re Malagari*, 182 USPQ 549.

Art Unit: 1754

Hund '913 teaches that it is possible to use the catalyst on a support material, such as aluminum oxide, etc (note column 3, lines 34-38). For other support material, without a showing of criticality or unexpected results, it would have been obvious to one skilled in the art to use any conventional carrier to support the catalyst of Hund '913.

Hund '913 further discloses that it is possible to combine the catalyst having a chromium dioxide basis with other oxidation catalysts, e.g., Au, Ag, alkali metal, rare earth metal, Pt, etc. (note column 3, lines 44-59). It would have been obvious to one skilled in the art to select any one or any combination of the other oxidation catalysts among the specifically mentioned in the list of Hund '913.

For the amount of the other oxidation catalysts, Hund '913 does not specifically disclose an example using gold (Au) in combination with chromium oxide, however, for other oxidation catalysts, such as  $\text{Sb}_2\text{O}_3$ ,  $\text{TeO}_2$ , as exemplified in column 4, note experiments (3)-(6), the amount of the other oxidation catalysts is about 6.3% ( $= 80 / (1190+80)$ ). In the event that a support was used, it would have been obvious to one skilled in the art to optimize the amount of the weight of the catalytically active compounds in the catalyst in order to sufficiently carry out the process of Hund '913. The process limitations in claims 1-3 are noted. However, when the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

Art Unit: 1754

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1,263,806 or Trubenbach et al (5,935,897)

GB '806 discloses a process for producing a halogen, wherein a hydrogen halide and oxygen are contacted together and reacted in the presence of an active catalyst which is a 13X molecular sieve and in which is deposited or exchanged a metal selected from one of the Group IB, IIB, VB, VIB, VIIB, VIII and the rare earth metals of Group IIIB, of the Periodic Table of the Elements (note claim 1). Suitable Group IB metals are copper, gold and silver.

Since gold is specifically disclosed as one of suitable metal for the catalyst, it would have been obvious to one of ordinary skill in the art to select gold as the metal in the process of GB '806.

The zeolite in GB '806 is considered as an alumina-containing support.

The temperatures for the reactions are preferred to be from 500 to 1000°F or 260-537°C. This range overlaps the claimed range of less than 300°C, note In re Malagari as stated above.

Alternatively, Trubenbach '897 discloses a process for preparing chlorine from hydrogen chloride by using a catalyst (note column 12, lines 29-63). The catalyst can have the catalytic metal support on a carrier (note Example 9). Trubenbach '897 teaches the catalyst or catalyst support can include 15-70% by volume of at least one of I) oxide of aluminum, titanium, zirconium, etc., II) a metallic powder selected from compounds metals and alloys of the elements gold, ruthenium, silver, rare earth, etc.,

Art Unit: 1754

III) an active component selected from the group of the inorganic acids, the metals lithium, sodium, potassium, calcium, strontium, gold, silver, etc. (note claim 2).

For the process limitations for the product claims 1-3, note In re Fessmann and In re Brown as stated above.

The difference is GB '806 or Trubenbach '897 does not specifically the amount of gold in the catalyst.

It would have obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount of gold in the catalyst for the process of GB '806 in order to promote the oxidation of hydrogen chloride to produce chlorine.

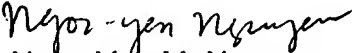
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stanley Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 or (571) 273-8300.

Art Unit: 1754

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.

  
Ngoc-Yen M. Nguyen  
Primary Examiner  
Art Unit 1754

nmn  
September 30, 2006